DIAGNOSTIC STUDY OF
STONE CARVING CLUSTER, BHUBANESWAR

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1.0 NATIONAL SCENARIO ON STONE CARVING

India has a rich tradition of stonework. Guilds of masons and stone carvers have existed here since the 7th century B.C. Since time immemorial, Indian architecture has relied mainly on stones. Innumerable Temples, forts and palaces of ancient Indian civilization have been carved out of locally available stones. Some of the ancient rock cut wonders are Khajuraho Temple, Elephanta Caves, Konark Temple, etc. Besides, all major archeological excavations have revealed exquisitely carved statuettes and carvings in stone. Old Buddhist architecture like the Sanchi Stupa etc. have also been carved out of stone.

The rich tradition of the artisans has been carried forward though generations to the present day. Using the simplest of tools coupled with expertise, patience and perseverance, these artisans create works of splendour, which have few parallels anywhere in the world. Of late stone working is not only restricted to ornate carvings on temples or sculptures of deities, but also used in making items like carved panels, tiles, paper weights, pen stands, models of historical buildings, sculptures of animals and humans etc. Indian artisans now produce a blend of the modern with ancient and are capable of reproducing music in stones. Many production units with latest stone processing technology are also operational in the country. Different types of stones like, marble, soapstone and sand stone are used by craftsmen in India.

The works related to marble, sandstone and flaggy Limestone activity are mainly spread over the State of Orissa, Rajasthan, carving on slate stone over Himachal Pradesh and Andhra Pradesh; while Granite is extensively used all over the Southern Peninsula, covering states of Tamilnadu, Andhra Pradesh and Karnataka.

Over 80% of the deposits of sandstone in India are in Rajasthan, spread over the districts of Bharatpur, Dholpur, Kota, Jodhpur, Sawai-Madhopur, Bundi, Chittorgarh, Bikaner, Jhalawar, Pali and Jaisalmer. The major work done here is the art work of Jali or trellis work. Pillars, Jali work and stone carving for buildings is a flourishing craft in Rajasthan and craftsmen are specially commissioned for work outside. This is also an export item in the state. The major locations of stone craftsmen in Rajasthan are Jaipur, Thanagazi, Kishori, Makrana, Jodhpur, Jaiselmer, Dungarpur, Alwar and Daussa.

2.0 ORISSA SCENARIO

The origin of stone carving in Orissa dates back to 13th century A. D. when medieval North India architecture of Kalinga School was in a flourishing stage. The world famous Sun Temple, that came up in this period is one of the finest examples of artistry. Since then families have passed on this tradition from generation to generation. Even today the stone craft is a special form of art and classified as a major item in the handicrafts sector of Orissa. Today there are many families who are engaged in this work as their livelihood. There are many craftsmen who have been honored with National & State level awards for excellence in this art and production of craft items of high artistic value.
Stone carvers of Orissa use hard granite, semi hard sand stone, and soft stones for their work. The stone carvers usually prefer to work on soft stone, as these are easy to carve using simple tools and the stones are also comparatively cheaper. The soft stones are of two types pink and white. The latest demand is for pink stone made items.

The Sand stones also called Khondolite stone (Sahana Pathar in local dialect) are available in plenty at Tapangagarh & Ghatikia of Khurda district & Lalitgiri of Cuttack district.

Soft stones (Khadi Pathar in local dialects) are found in Balasore, Keonjhar and Mayurbhanj districts of Orissa.

Stone carvers are generally found in places where the stones are abundantly available. The reason for this may be the fact that Stone is a bulky and heavy material. The cost of carrying the stones to distant places will be too high making it economically unviable. In Orissa, the stone carvers are mostly distributed in the districts of Puri, Khurdha, Cuttack, Balasore, Keonjhar, Jajpur, Ganjam and Mayurbhanj. As per statistics of the Directorate of Handicrafts & Cottage Industries, the stone carving artisan concentration in Orissa is shown in the following table.

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>District</th>
<th>Cluster</th>
<th>Block</th>
<th>Nos. of Artisans</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Balasore</td>
<td>Baulagadia</td>
<td>Oupada</td>
<td>250</td>
</tr>
<tr>
<td>2.</td>
<td>Balasore</td>
<td>Soro</td>
<td>Soro</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>Cuttack</td>
<td>Lalitgiri</td>
<td>Mahanga</td>
<td>100</td>
</tr>
<tr>
<td>4.</td>
<td>Ganjam</td>
<td>Mathura</td>
<td>Polsara</td>
<td>150</td>
</tr>
<tr>
<td>5.</td>
<td>Jajpur</td>
<td>Sukhuapada</td>
<td>Balichandrapur</td>
<td>100</td>
</tr>
<tr>
<td>6.</td>
<td>Keonjhar</td>
<td>Dhakhota</td>
<td>Anandpur</td>
<td>100</td>
</tr>
<tr>
<td>7.</td>
<td>Khurdha</td>
<td>Bhubaneswar</td>
<td>Bhubaneswar Municipality</td>
<td>300</td>
</tr>
<tr>
<td>8.</td>
<td>Mayurbhanj</td>
<td>Khiching</td>
<td>Sukruli</td>
<td>200</td>
</tr>
<tr>
<td>9.</td>
<td>Mayurbhanj</td>
<td>Lulung</td>
<td>Udala</td>
<td>116</td>
</tr>
<tr>
<td>10.</td>
<td>Puri</td>
<td>Puri sadar</td>
<td>Puri</td>
<td>170</td>
</tr>
<tr>
<td>11.</td>
<td>Puri</td>
<td>Konark</td>
<td>Gop</td>
<td>200</td>
</tr>
<tr>
<td>12.</td>
<td>Kalahandi</td>
<td>Kandagarh</td>
<td>Koksara</td>
<td>100</td>
</tr>
</tbody>
</table>

The total number of stone carving artisans in the state is 5620 with production status of 688.26 Lacs per annum. Stone carving has been identified as a ‘Craft with development potential’ by the Directorate of Handicrafts & Cottage Industries, Orissa. Out of these, cluster spread over parts of Puri, Konark and Bhubaneswar is the most prominent stone carving cluster.

The items produced by the artisans in different Orissa stone carving clusters can be classified into four categories such as:

**Household utensils:** These include large pots to store water and cattle feeding, dining plates, saucers, cups etc.

**Sacred Wares:** Chandan pedi (Base stone for preparation of sandal paste), pedestal for deities.

**Icons:** Images of traditional deities.
Luxury goods and artware: Konark charka, dancing girl, figurines of animals and birds, stone cups, stone lamps, pen stands, visiting cardholders etc.

However it is seen that the Bhubaneswar cluster has mainly Icons and Luxury goods and art ware as its main products.

3.0 EVOLUTION OF THE CLUSTER:

Artisans in the cluster point out, that the cluster did not have much stone carving activity before 70s other than construction of temples. This activity too was on a part time basis and did not offer sustained livelihood to artisans. There was very little local demand for stone carved items like small cheaper souvenir items. The in bound tourists were the main stay for these artisans. The market for high end costly items such as statues, dancing figures was sporadic, limited and on demand basis only. More often than not artisans had to fall back on other livelihood options such as farming and even daily labor. Gradually the next generation lost interest and only a few remained in the profession.

During such a crisis in 70’s, DC-Handicrafts office took many critical steps to revive the traditional art. It not only provided training to the budding artisans on the finery of the art work but also entered into marketing support. Later, Directorate of Handicrafts, Government of Orissa entered into direct marketing of handicraft products through it’s own marketing outlet (Utkalika) at different strategic places in and out of the state. Slowly the number of people engaged in this craft increased along with better income generation opportunities. Another important step was facilitating the attendance of the selected artisans in national and regional level exhibitions. This became an important channel for marketing of the products. Through this channel many capable artisans interacted with national level dealers and export agents and secured orders. Gradually their business flourished attracting other artisans and entrepreneurs into the trade. Many artisan-cum-traders opened their production center (craft production units) in and around Bhubaneswar. Now more than 40 production units are operating in the area. Apart from this about 750 artisans are engaged in producing the artifacts as their livelihood.

30% of the craft production units have come up in the last 5 years. Most of the new enterprises are established by young entrepreneurs who were working previously in different units. With gradual growth in skill and confidence level they started their own units employing a group of artisans. All these units are dependent on local showrooms to sell their products. This also indicates the fact that there is potential in the local market to absorb increased volume of the products.

4.0 STRUCTURE OF THE BHUBANESWAR STONE CARVING CLUSTER

4.1 Geographic spread of the cluster:

Based upon the geographical spread of the stone carving activity, the cluster can be divided into 3 sub-clusters as follows:
1) **Konark sub-cluster** (60 kms from Bhubaneswar) is mainly spread over 5 odd villages with a population of app 100 artisans. There are also 8 craft production units employing 80 artisans.

2) **Bhubaneswar sub-cluster** has 35 craft production units employing 300 artisans. There is no presence of household enterprises.

3) **Puri sub-cluster**, (60 kms from Bhubaneswar) has 6 craft production units employing 60 artisans. Apart from this there are 60 artisans who are operating as household enterprises from two locations of Puri town. There are 50 household enterprises in Sakhigopal block situated at a distance of 15 kilometres from Puri town. The distance between Puri and Konark is 35 kms.

As a whole the cluster has 49 production units (craft production units). The craft production units employ 440 artisans whereas 330 artisans operate from their households.

Many production unit owners of Bhubaneswar belong to Konark and Puri. In case of larger volume of order, they sub-contract the work to the craft production units as well as household enterprises in Puri and Konark. The selection of the sub-contractor is based on personal relationship and capability. A portion of the products from Puri and Konark sub-cluster are also channelised through the local showrooms of Bhubaneswar.

**4.2 Main cluster actors**

**4.2.1 Craft production units of the cluster:**

Craft production units is a unit established by a master craftsman, most often, in a rented premise where he employs a handful of artisans- both skilled and semiskilled to produce stone carving products. Quite often the craft production units also has linkages with independent artisan in nearby villages – though on irregular basis. In the craft production units the production system is more organised than individual efforts of artisans from home. The proprietor of the center secure orders for supply to the local traders. They also produce the items anticipating the market trends so that they can approach the dealers and sell their products. A few entrepreneurs have direct linkage with national and international market.

The work from the artisans is got done on a subcontracted price – which quite often is 50% of the selling price or on daily wage basis. However semi skilled artisans are hired on a daily wage rate basis only. In both the cases the raw material, tools, work shed, boarding and lodging are provided by the craft production units owner. The artisans migrate from their villages to work in these units after they learn the skills either from Government sponsored training centers or from any Master Crafts Man.

Three distinct categories of Enterprises can be found in the cluster with different characteristics as brought out in the table below.
<table>
<thead>
<tr>
<th>Type of enterprise</th>
<th>No. of units</th>
<th>Number of Employees in one unit</th>
<th>Turnover (in Lacs)</th>
<th>Market</th>
<th>Usage of Tool</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bigger Enterprises</td>
<td>3</td>
<td>30 or more</td>
<td>18</td>
<td>National and exports</td>
<td>Mechanized</td>
<td>Formal sources</td>
</tr>
<tr>
<td>Smaller Enterprises</td>
<td>10</td>
<td>12-15</td>
<td>7</td>
<td>National and local</td>
<td>Low mechanization</td>
<td>Informal sources</td>
</tr>
<tr>
<td>Tiny Enterprises</td>
<td>21</td>
<td>5-7</td>
<td>2.5</td>
<td>Local</td>
<td>Very low mechanization</td>
<td>Informal sources</td>
</tr>
</tbody>
</table>

All the craft production unit entrepreneurs operating in Bhubaneswar have migrated from other places. About 75% of the units in Bhubaneswar are headed by persons who come from Lalitgiri area of Cuttack district. This area possess stocks of sandstone and many traditional artisans reside in this area. But they lost their livelihood with declining demand for stone craft. In the 70’s, a few entrepreneurs shifted to Bhubaneswar and started producing to cater to the local market. With their success in business, more and more skilled artisans shifted to Bhubaneswar and opened their workshops to cater to domestic market at local as well as national level. The other craft production units entrepreneurs are from Gop & Puri which has a traditional base of stone carving. They have established their workshops in the vicinity of Bhubaneswar for easy access to traders/showroom dealers. The traders can visit their workshops and select the products for buying or placing orders.

**4.2.2 Artisans in the cluster:**

One important aspect of the cluster is that the artisans are primarily engaged in this sector as a means of their livelihood. Though it may not give them very good return from business point of view, it certainly gives them a better and dignified livelihood option in terms of skilled labor nearer to their homes.

**The process of acquiring the skills:** Mastering the craft is a long drawn process and usually takes 5 years before a trainee acquires the skill to produce high grade products. There is a Gurukul system prevalent in the cluster where the trainees stay with the MCM for long periods. They work in the workshops and gradually pick up the skill. In lieu of their labor they get free lodging and boarding facility. Generally the new comers are not paid any wage till they are in a position to contribute significantly to the production process. However they are periodically paid honorarium as decided by the MCM.

The craftsmen working in the cluster can be categorized in to two types - Skilled craftsmen and semi skilled craftsmen.

The skilled craftsmen have the necessary skills to produce high end products of exquisite artistry. They have the special skill of drawing the sketch on a piece of stone and doing the initial carving. This is the most crucial stage in the production which determines the overall quality of the product. The less skilled persons can take over from here and deepen the carvings according to requirement. Again in the final
stage the craftsmen make the final inspection and makes necessary modifications to ensure quality of the product. They also add the exquisite finer carvings wherever necessary. Apart from this they guide the artisans in the production process whenever necessary. They have many years of experience in stone carving under the tutelage of a skilled craftsman before they graduate to this stage.

These craftsmen are proud of their skill and usually make the important carvings themselves such as face of the statue which needs delicate handlings. Their monthly earning is around 6000/-@ 200/- per working day. However some highly skilled craftsmen even earn more than that.

It is estimated that craft production units employ about 80-90 skilled craftsmen in the cluster.

**Semi skilled Craftsmen**: They have the skill base to produce small items which require low skill level. They can also carve bigger statues once the initial carving is done by skilled artisans. Most of the artisans operating from their households fall in to this category. Craft production units operating in the cluster have employed 450 semi skilled artisans in their units. Their average earning per month is 2500 to 3000/- @ 80/- to 100/- per day.

### 4.2.3 Raw material (Stone) suppliers

There are two types of stones used for making carvings- soft stone and sand stone. All household enterprises work with soft stone. Although soft stone is easier to work with, it does not lend itself to carving of bigger statues. In fact sizes beyond 3 feet are very difficult to get in soft stone. But very fine artwork can be done on this stone as this is softer.

The craft production units have over a time specialized either in sand stone or soft stone. More than 70% of the craft production units in Bhubaneswar specialize in sand stone carving. At the other two places 50% of craft production units have specialized in sand stone.

The soft stone is available at places called Barbil, Keonjhar (Pink stone) & Kaptipada, Mayurbhanj (white stone), both of which are 350kms away from the cluster.

The hard stone is available at Tapanga near Khurda which is 50kms away from the cluster. The advantage of soft stone over hard stone is that finer carvings can be done using the hand tools which brings out the best in the craftsman. The Tapanga mines area is the property of Lord Jagannath Temple Trust. It has been taken as a lease on annual basis by a private party. Consequently the mines are sub-contracted to the entrepreneur who sells the stone pieces to the carvers. He has a group of laborers who extract the stone pieces. The production firms make an order generally followed by an advance to the entrepreneur. The lessee collects royalty from the stone carvers on the basis of truck loads.

Sandstone is procured directly through the mines by getting in touch with the contractor. On the other hand soft stone is available with local traders who in turn buy the stone from the mines.
Basic cost of a truck load (10 tonnes) of sand stone varies from Rs. 12000/- to Rs. 14,000 as per the size of the stone. Over this, royalty paid to the lessee of the mines costs about Rs. 2250. Further Sales Tax of Rs 1400/- has to be paid to the state govt. Cost of labor for loading and unloading also needs to paid to truck owner at the rate of app. Rs 1250. During last five years the royalty has increased fourfold making the raw material costlier. However the price of the product has not increased proportionately making the artisans bear the brunt.

There are 3 soft stone suppliers in the cluster (one each in Konark, Puri and Bhubaneswar). They buy the soft stones from the mines at Barbil and Kaptipada. Procurement price for the traders including transportation is 350/- per quintal. The selling price in the local area is around 500/- to 600/- per quintal. Thus the cost of one truckload of stone is Rs. 50,000 to 60,000.

4.3 PRESENT PRODUCT RANGE:

The craftsmen in the cluster follow the ‘Shilpashastra’ (Ancient guideline) for their craft. The inspiration for the beautiful arts come from the endless motifs engraved in the temples of Konark, Puri and Bhubaneswar. Prominent amongst them are; ubiquitous "Alasa Kanyas" or indolent damsels and "Salabhanjikas", lady with the bough of a sal tree, "Surasundaris" heavenly beauties playing on different musical instruments adorning the topmost tier of the Konark temple, the "Nava Grahas" or nine deities representing the nine planets, Konark wheel, Konark horse, elephant, lion, composite mythical figures like 'Gajabidala', 'Gajasimha' etc.

Other motifs include representation of deities of the Hindu pantheon like Krishna and Radha, Laxmi, Vishnu, Durga, Buddha, Ganesa, 'Haraparvati', Nrisingha etc. In recent times many decorative and utilitarian articles like ashtrays, paperweights, candle stands, book rests are also being made. These carvers also make images for installation in temples as presiding deities and Parswa-Devatas as well as large pieces for decoration of public places.

Unlike sculptors of other places, the artisans of this cluster are at home with a variety of materials. They handle with equal facility the ultra soft white soapstone, or "Khadipathara", as the slightly harder greenish chlorite or "Kochilapathara" and the still harder pinkish Khandolite or "Sahanapathara". However Granite is not so much used in the cluster.

The Household enterprises mostly produce low cost items within a range of Rs.50/- to Rs.200/- which are sold to the tourists visiting Puri and Konark. The products are mainly Konark wheel, replica of Temples, pen stands, ashtrays, paperweights, candle stands etc. However many skilled craftsmen also produce small statues of Gods, dancing girls, animals etc. which are cost Rs.500/- or more and sold to the showrooms at Bhubaneswar.

The craft production units produce costlier items ranging from Rs. 1000/- to Rs. 10,000/- or more. The items are generally bigger in size & include dancing girl, figurines of animals and birds, stone lamps, statues of idols etc.
5.0 PRODUCTION PROCESS:

The production process can be divided into four stages as follows:

First Stage - The raw stone is cut to desired size by the use of saw and chisel. The emphasis is on getting as big a size as possible to make the product costlier. Further the sides of the stone are made even by removing the roughness through an instrument called Randa. The artisan then draws his diagram of desired design by pencil and shapes by using chisel.

Second Stage - The shaped item is then subjected to further deeper carvings. The main instruments are chisel and hammer.

Third Stage - Further refinement is done through guna & tagi. The artisan makes his own judgment for using the right size of instrument which influences the quality. Sand paper is used for polishing at this stage.

Fourth Stage - The artisan's efficiency of craft production depends on his ability to make the item more attractive and an object of beauty. He therefore, tries to make the carvings and ornamentation of the product in this stage to add to the value. On completion of his carvings, the artisan uses emery cloth and water paper to impart a better finish and shining. Sometimes transparent liquid like lacquer, wax are used to bring out the contours of the statue more prominently.

6.0 TECHNOLOGY – USE OF MACHINES AND TOOLS

The production is totally manual and depends largely on the skill level of the craftsmen. Only a few production units have machines such as Electric saws for cutting the stones into regular sizes; Drilling machines for making holes and carvings. However the carvings are done manually using hand tools.

The craftsmen use tools of different sizes and shapes. They are:

- Tagi- A sharp edged instrument flattened in the front of various shapes and sizes
- Guna Tagi- A sharp edged instrument flattened in both sides of various sizes.
- Muna – A sharp edged instrument pointed at the front of various sizes
- Hammer- Wooden and iron
- Saw – For cutting the stones.
- Mottam- Angle scale
- Batali – Chisel
- File- for polishing
- Compass – Instrument for measurement
- Emery cloth and water paper – for polishing
- Combination stone- For sharpening of tools

The bigger craft production units use machines to do the standard works such as electric saws for cutting and sizing the log of stone, grinding machine to make holes and polishing using the grinding machine but different head.
The medium units use grinding machine for making holes and polishing where as the artisans do not use any machines other than hand tools.

7.0 MARKETING SETUP IN THE CLUSTER

7.1 Market channels

**Market Channel for Craft production units**

![Diagram of Market Channel for Craft production units]

**Market Channel for Household enterprises**

![Diagram of Market Channel for Household enterprises]
The three sub-clusters are organized differently as far as operations of craft production units, Skilled craftsmen and semiskilled craftsmen are concerned. Output from Household units in Puri and Konark is targeted towards the local marketing channel meant for tourists other than once in while subcontracted work from craft production units. Though the return is not very high in local tourist market, the poorer artisans are assured of selling. Besides the products are standardized and suits the low skill level of the artisans including women. The margin is 5% to 10% depending on the demand of the product in the market and tourist inflow.

However the focus of craft production units is regional, national markets and exports though to a limited extent. There are 25 showrooms operating in the cluster who are an important link between producers and buyers. The units use these showrooms to sell their products both in the local markets as well as national markets. So 80% of the national marketing is channelised in this manner where as the rest 20% is through direct marketing by the enterprises. Moreover the direct market is limited to only bigger enterprises. Through this channel the craft production units are able to get a margin of 5% or even less. The trading units get a margin of 15-20% where as the national dealers get a margin of 30% to 50%.

The craft production units also get their products sold to the consumer in the local market through local showrooms/ traders. Here again the showroom dealers garner as much as 30% to 50% margin where as the artisans get only 5% margin. 30% of the total sell of the showrooms are directly to the consumers, where as the rest 70% goes to the domestic market at national level.

Craft production units also supply directly to national level traders and export market. This channel provides maximum possibility for getting higher percentage of profit for the craft production units. They get a margin of 20% to 30% excluding packaging and transportation cost. Sometimes it goes upto 40%. In fact the capable craft production units are striving for more and more of their products to be absorbed through this channel. They have developed these contacts mainly through participation in national level exhibitions and fairs.

But there is no systematic effort to attract the national/international buyers by craft production units. There is no catalogue illustrating the profile of the producers and their products either in written form or in electronic media. Similarly the producers do not have information about the prospective buyers including their addresses, preferences, procedure of procurement etc.

Only 3 units have direct linkage with export market.

7.2 Handicraft showrooms/ sales outlets in the cluster

There are 25 showrooms working as local outlets in the cluster. Most of them are located in the city of Bhubaneswar They are also involved in trading at national level (Rajasthan, Mumbai, Delhi, Hyderabad etc). There is a marketing outlet as Ekamra Haat promoted by Ministry of Textiles, entirely devoted to handicraft products in the heart of the town. Apart from this ORUPA has a marketing outlet in Lewis Road. About 5 of these showrooms are owned by the craftsmen themselves who have production units. Other showroom owners have certain expertise in appraising the quality of a product and deciding on the price tag. Around 30% of the total produce is
sold directly to the consumers from the showrooms. The rest 70% are channelized to National market through these showrooms.

There are about 80 small vending units in Konark selling to the tourists. They have an association with 52 members. Similarly more than 20 small retailing outlets operate in Puri Sea beach and another 20 in the roadside (Badadanda).

8.0 DESIGN TRENDS:

The unique identity of the stone carvings based on Temple motifs make the products attractive and has a niche market. The products bear designs unique to the cluster & are internationally renowned for their beauty. According to the craftsmen, the motifs in the temples are like open albums from which they can pick up the designs. Many additional features have been added to this basic design to make it more attractive and cater to the market demand. For example addition of a tree to the standing danseuse, icons of Gods inside a Conch, on a leaf etc.

However there is no systematic approach and investment to develop new range of products according to the needs of national and international consumer. Though there are new features added to the existing product, there is hardly any diversification and new addition to the product range over the years.

The craftsmen observe new designs from other items such as brass, appliqué works, paintings and draw inspiration from them to develop new models on their own effort. Recently there are some efforts in the cluster for integration of utility items with decorative features. Some craftsmen are experimenting on this concept by developing items such as wall hangars, pen stands with human heads, card holders with carvings of animals and birds etc. But the production of this new range of products is very low and has not captured the market to be mass produced.

Another aspect is that most of the products are based on Hindu Gods and Goddesses and their attachments. There is no product range to cater to the local preferences of external markets (example: figures of Jesus and Mary). Budha statues have become a very popular item in countries like Japan. One unit has successfully exploited this market demand and has grown to be a big unit.

But the design development system is absent in the cluster which takes the feed back from the end users and incorporates them into the products on continuous basis. There is no resource organisation actively involved in design development and feeding to the craftsmen regularly.

9.0 CREDIT SITUATION:

The capital investment in a typical craft production unit is from 80,000 to 2 Lac. Even Household Enterprises involve an investment of 20,000/-. Major factors impacting the size of working capital are raw materials, payments and wages.

Stone is the primary raw material for production. This is bulky, heavy and not available locally. The stones are lifted from mines manually which is a time taking procedure. The craft production units individually or combine together to place order for sand stone from Tapanga which is 55 kms. from Bhubaneswar. They pay advance either partially or in full to the mines owner to place their orders (20,000/-
upto Bhubaneswar and 25,000/- upto Puri/Konark). It takes several days (more than ten days in most cases) to get the material. During rainy season water enters into mines further delaying the procurement. All this necessitates storage of raw material thus increasing the requirements of working capital.

The issues of working capital further get compounded due to the fact that the traders do not pay regularly and in time to the producers. They tend to keep a backlog of payment to keep a clutch on timely delivery of the products.

The craft production units employ artisans who require regular payment for their survival. The proprietor has to pay advance to meet any emergency need for his employee such as health problem, marriage etc. which can be upto 5,000/- per person. This is recovered in installments from the salary.

Taking all the relevant factors in to account the working capital requirement for a craft production unit having 2 skilled 8 semi skilled craftsmen (tiny unit) is app 1.74 Lacs for completing one business cycle on 3 months. Similarly a household unit requires app Rs. 3,000 as working capital. (See annexure IV for detailed calculations)

Apart from 3 bigger enterprises, only 1 unit has received bank loan. Rest of the units depend upon informal sources of credit where the rate of interest can be as high as 60% -100% per annum. Some of the MFIs operating in the Puri, Bhubaneswar and Konark are not even aware of existence of these units.

**10.0 VALUE CHAIN ANALYSIS**

The value chain can be found for two variants based on raw materials i.e. Sand stone and Soft stone. The value chains in schematic format are attached as Annexure –1.

**ANALYSIS**

Raw material accounts for 15% to 20%of the total cost of production. The main value addition is at the carving stage.

The size of the stone is one of the major influential factors in determining margin as the cost of the product increases exponentially according to the size. But the bigger size stones are not available from the mines. As the mining is done manually, the large pieces are limited and cost high.

The process of carving involves the major cost component in production process. The cost of production can be reduced significantly if the time taken for carving can be reduced. This can be done using mechanized hand tools such as grinders, cutting machines, polishing machines etc.

The manual cutting and sizing of the stone involves significant expenditure and takes time. This can be reduced by application of mechanized tools such as electric saws.

The profit margin of Producer is uncertain. When demand is there and the order is placed by the trader, he gets margin. Frequently he approaches the trader and sells the product at 5% & less margin. He does this to generate employment opportunity (or to meet his marginal costs) and rotate the capital.
11. Cluster Map: Bhubaneswar Sub-Cluster

- **Backward linkages**
  - Mines at Kaptipada, Mayurbhanj & Barbil, Keonjhar
  - 1 soft stone supplier at Kaptipada, Mayurbhanj
  - 1 soft stone supplier at Bhubaneswar
  - Tool supplier from Lalitgiri, Cuttack
  - Sand stone supplier from Tapanga, Khurda
  - Directorate (Handicrafts)
    - Handicrafts Complex, Gandamunda, BBSR
  - DC (Handicrafts) – Local Office
  - Kalinga Shilpi Mahasangha (Federation of Artisans)
  - ORUPA (Producers’ Association)

- **Forward linkages**
  - Larger production units who have marketing linkage at National & international level
  - 6 medium craft production units who have market linkage at national
  - 26 smaller craft production units who have market linkage at local level
  - Utkalika government outlets
  - Direct selling through Exhibitions-cum-fair
  - 20 showrooms/trading centres in Bhubaneswar
  - Direct buy by tourist both domestic and international
  - National Dealers
  - Export Market
  - Bank
  - National Dealers
  - Export Market
Cluster Map: Puri Sub-Cluster

**Backward linkages**
- Mines at Barbil, Keonjhar and Kaptipada, Mayurbhanj
- 1 soft stone supplier at Puri
- Tool supplier from Lalitgiri, Cuttack
- Tapanga Mines – 115 Kms

**Forward linkages**
- Showrooms at Bhubaneswar
- National market
  - Export market
  - Local outlets at Sea beach and retail shops
  - Direct buying by tourist both domestic and international

- 6 craft production units
  - 60 household enterprises at Puri
    - 1 cooperative Society
  - 50 household enterprises at Sakhigopal
    - 2 SHG

- Directorate (Handicrafts)
  - Handicrafts Complex, Gandamunda, BBSR
- DC (Handicrafts)
- Kalinga Shilpi Mahasangha (Federation of Artisans)
- ORUPA (Producers’ Association)
- DIC (Puri)
- Puri Creative Handicrafts co.op. Society
- SWAD (NGO)
Cluster Map: Konark Sub-Cluster

**Backward linkages**
- Barbil Mines – 350 Kms.
- Tapanga Mines – 115 Kms
- 1 stone supplier of soft stones

**Forward linkages**
- 8 craft production units
- 100 household enterprises including 40 women household enterprises
  - Traders who give orders and collect the products
- Showrooms at Bhubaneswar
- National market
- Export market
- 80 retail outlets of Handicraft products – clustered around Konark temple
- Association of retailers with 52 members

**Training centres**
- 1 training centre by DC (Handicrafts)
- 1 training centre under Baba Saheb Ambedkar Project. by Arkasri(NGO)

**Other entities**
- Directorate (Handicrafts)
- Solar (NGO)
12.0 CURRENT INSTITUTIONAL LINKAGES

12.1 DC Handicrafts Regional office

DC Handicrafts is a supporting agency for different developmental schemes. The main areas of focus of the agency are:

- Organisation of Design and Technology development workshops
- Selection of National awardees from Handicraft sector
- Provide support for cluster development program under Ambedkar Hastashilpa Vikas Yojana (AHVY). The activities are skill upgradation trainings, market linkage through exhibitions, formation and capacity building of artisan SHGs.
- Setting up Handicraft Museum and design center

12.2 Directorate of Handicrafts, Government of Orissa:

Directorate of handicrafts was established under Industries department in 1992. The aim of the directorate is to promote handicraft sector and artisans in the state. The State Government places resources for the Directorate for both planned and unplanned expenditure. There is a provision for special program under Revised Long Term Action Plan.

The major focus of the Directorate is to create better self-employment opportunities for the artisans. The schemes can be divided into 2 separate types; they are aimed at individual & support through Cluster Development Approach. The individual schemes are Rehabilitation of Handicraft Artisans & Development of handicraft enterprise.

The Cluster Development Approach consists of Craft Village Scheme (Shilpi Gram Yojana) and Marketing of the products. CVS is aimed at SHG formation and capacity building, financial linkage with banks and training on upgradation of production and design. Marketing linkage is promoted through Utkalika, exporters and Handicraft emporiums.

It has an extension by the name SIDAC (State Inst. for Development of Arts & Crafts) established in 2004 which is the implementing agency. The major activities are:

- ITI training of 2 years duration with 10 trainee per batch for 8 trades including stone carving
- 21 field level training institutes spread over the state which provides craft based training(Two training centres on stone carvings are at Konark & Khiching respectively)
  Design development trainings and workshops organised periodically
- Implementation of RHA (Rehabilitation of Handicraft) scheme which includes credit support upto 25,000/- per artisan.
Many artisan cooperative societies were formed for the collective benefit of the artisan groups at Puri and Konark during the course of last decade and even before that. There are 9 cooperative societies in the cluster. But they are yet to address the business issues successfully. There are also 7 SHGs of the stone carvers in the cluster. All of them are promoted by NGOs of the cluster.

12.3 Banks/Micro-Finance Institutions

As most of the units are operating in the vicinity of Bhubaneswar, Puri and Konark township, They are coming under the service area of many banks including Bank of India, State bank of India, Bank of Baroda etc. However only 3 larger units and one smaller unit in the cluster are credit linked to the banks. There is not much effort from the craft production units entrepreneurs to get credit linked in the banks.

There are 3 MFIs present in the cluster. They are BASIX, KAS Foundation & Adhikar. KAS Foundation and Adhikar have presence in the field, where as BASIX is not directly operating in the cluster.

12.4 NGOs in the cluster:

There are two state level Producers’ associations located at Bhubaneswar. Kalinga Shilpi Mahasangha (KSM) has the main agenda of promoting the business interest of artisan groups by organizing them. It has its own marketing outlet for handicraft products by the name ‘Shilpika’ at the Ekamra Haat in the heart of the city. ORUPA (Orissa Rural & Urban Producers Association) has undertaken many promotional projects for handicraft sector in the state. It has its marketing outlet at Lewis Road.

Though these organizations have a significant role in bringing together the artisan groups, they are yet to bring a significant improvement in the business prospects. The artisans are still operating on individual basis.

‘ARKASHREE’ is a Konark based organisation working for the artisan groups since 1987. They have a project under ‘Baba Saheb Ambedkar Hastashilpa Yojana’ since last 2 years meant for skill upgradation of artisans. 125 Artisans of the area are linked to the organisation. It has formed 7 SHGs of artisans which are in the formative stage. It is involved in organizing annual fairs at Konark for sales promotion of artisans.

SWAD is another NGO located at Nuagan, Satyabadi block. This is 15 kms from Puri. The area has 60 artisan families working as stone carvers. 25 of the artisans are women. SWAD is involved in promoting stone carvers. It has supported in design development, marketing linkage, skill upgradation training. Two SHGs of stone carvers have been formed and groomed for further development.
13. SWOT ANALYSIS

13.1 STRENGTHS

1. The product range of the cluster has a special identity and reputation in the market. It has created a niche market for its product with its unique design.
2. The carving skills of the craftsmen are exceptional and highly rated in international market.
3. The cluster has a sizable number of craftsmen along with artisans to create a vibrant cluster.
4. The cluster is situated in the major tourist zone of Eastern India. There is potential for increasing volume of direct marketing to local tourists. In fact one of the major sources of marketing in Konark and Puri sub clusters is direct marketing to tourists through local outlets.
5. Comparatively low level of credit requirement to enter into this craft.
6. The gestation period for this type of enterprise is low as work can be done from home front on small scale.
7. Kalinga Shilpi Mahasangha(KSM) & ORUPA are state level association of artisans with strong presence of stone carving artisans. They can be facilitating agencies for stronger networks of artisans and other stakeholders.
8. The skilled craftsmen have the ability to develop new products based on photographs or products of other materials. Frequently they receive orders based on photographs or specific requirements of the customers and design the products to satisfy the particular needs.

13.2 WEAKNESSES

MARKET RELATED PROBLEMS

1. There is undercutting of price. Some times the producers are not able to recover their cost of production. This is happening due to lack of enough opportunity to directly market the products.

2. There is hardly any information flow in relation to
   - Volume of demand and market share
   - Market trend in design and product range
   - Price of the product
   - Market competitors and their advantages/disadvantages etc.

3. Linkages with National market channels at Mumbai, Delhi etc. are rare excepting a few craft production units.

4. Lack of any brand image for the products of the cluster. Though the products have a distinct design pattern unique to the area, many sub-standard products also get into the market. This dilutes the market demand.
5. Opportunity to participate in national level fair, exhibitions, retailers meet is limited.

6. No uniformity in assessing quality and subsequently price of the product. Wide discrimination in price resulting in unhealthy competition which is eating away into profitability. This is also creating a poor image in the market.

CREDIT RELATED:

1. The artisans have poor economic background. Thus they are not able to manage business activities like raw material procurement in time, proper working environment, enough stocking of finished products which can attract the buyers & help in business growth.

2. Informal source of credit leads to high interest rate (60% to 100% per annum). However the craft production units entrepreneurs & artisans are compelled to avail informal loan as they are not able to access Institutional credit system.

ORGANISATION RELATED

1. The master craftsmen and artisans are not oriented to market driven business. They are yet to appreciate the importance of changing their product and strategy according to changing market demand.

2. There is lack of organised effort to take care of the larger interest of artisans. Though the artisans are involved in this profession for long periods they have not been able to forge business partnership which can address their mutual problems and issues. There is lack of mutual trust among the major players such as Craft production units, Marketers etc. The information regarding marketing channels, new product ranges and design trends etc. are kept hidden from each other.

3. There have been sporadic efforts to organize the artisans through co-operatives & SHGs. But the co-operative societies/SHGs have proved inefficient in addressing the larger issues on consistent basis as they suffer from lack of market driven approach.

RAW MATERIAL AND TECHNOLOGY RELATED

1. The raw materials of required quality and quantity are not available in time hampering the production process. The production units do not get large size stones according to their choice which can be used for larger statues fetching better price. This leads to under utilization of their skills and limits their profitability. The cost of raw materials has increased sharply during last 5 years, but the cost of finished goods has not gone up proportionately.

2. There is very limited use of machines in the cluster particularly doing standard works such as cutting and sizing the statues, making holes and polishing. Where as
machines are used in other places for similar kind of production. This is not allowing to reduce the cost of production and be competitive in the market.

4. Sand stone, the base material for production is available at Tapanga which is 55 kms. away. Soft stone is brought from a distance of 350kms. This has implication in terms of access over the raw material. There are as yet, no alternative sources of mines which can provide the stone to the cluster on regular basis.

**DESIGN DEVELOPMENT RELATED**

1. The design development efforts in the cluster are not based on the feed-back of the end user. The designs are not properly tested in the market before they are selected in the design development workshops.

2. The new range of products are not advertised enough to attract the attention of prospective buyers at National and International level.

3. The main products of the cluster are decorative items. The utility items in the cluster conforming to the latest market trend are not very visible. There is not enough effort to integrate the utility items with decorative features and the range of products in this line are very limited.

4. No proper support for latest design inputs which can lead to better market share and better price. Though support service agencies have arranged design development workshops a few times, the designs have not percolated to be included in commercial production.

5. The products are mainly icons of Hindu Gods/Goddesses. Excepting Budha statue, no product to cater to the need in export market.

**13.3 OPPORTUNITIES**

1. Demand for Orissa handicrafts, especially stone carving is strong and has a potential to grow at national and international level.

2. The product is eco-friendly and has potential to draw higher demand in export market as it is an entirely natural product.

3. Appropriate technology is available at affordable prices in India for improving productivity.

4. Platforms for international marketing through e-commerce is available in India which can be exploited for export linkage.
5. Support institutions like SIDBI, Directorate Handicrafts, DC-Handicrafts, local banks are interested in promoting the handicraft sector in Orissa.

6. There is scope for Government support in terms of various schemes and projects. An autonomous body like SIDAC (State Inst. For Development of Arts and Crafts) has been established under the auspices of Directorate Handicrafts to look into the larger issues like design development, skill upgradation etc.

7. Presence of Micro Finance Institutions (MFI) in the cluster gives scope for easier access to credit.

13.4 THREATS

1. More than 150 skilled craftsmen have left their home for better job opportunities out of the state. They are mostly located at Rajasthan and Mount Abu. The reason for such migration is better wage and regular employment opportunities. This trend is still continuing. This is resulting in shrinking artisan concentration in the cluster.

2. New designs and new product ranges are available in the national and international market with constant effort in design upgradation. But the design development efforts of the cluster are very weak and stagnated. Thus the existing product range may face stiff competition from other clusters.

3. In the absence of any design patenting, many imitation products with cheaper price range are coming into the market making the competition stiffer.

4. Seasonal unavailability during rainy season of raw material hampers the production process. As there is not enough stocking of the raw material due to many factors such as capital, storage space, lack of enough order etc., the production process either slows down considerably or stops.

5. There is lack of clear cut policy guidelines to procure stone which is a mines based raw material. This is resulting in limited access to the raw material by the producers.

14.0 VISION OF THE CLUSTER:

The total turnover of the cluster will go up to Rs. 6 crores from the present level of 2.5 Crores by the year 2010 through reaching out to national and export markets by adoption of market based design, improvements in production systems, improved credit flow and collective efficiency.

15.0 STRATEGY

The main drivers of the growth will be craft production units which in turn will sub contract work to household units and their groups. Simultaneously some households will also grow in to craft production units to drive the growth further.
Craft production units

These units will make collective efforts for creating linkages in national and export markets. This will be possible through improved and contemporary designs on one hand and improved productivity on the other. Thus the use of modern tools and machines to improve productivity and standardization would be one of the major planks of strategy. Simultaneously adequate credit flow to the units through innovative mechanisms would bolster these initiatives.

Household enterprises

A segmented and differentiated approach needs to be taken for the household units. The units which are high on the skill scale need to be nurtured for either sub contracting relationships with the craft production units or graduating in to a craft production unit themselves. There is a strong market demand in the lower end of the market where low skilled household units work. Increasing productivity for these units and helping them to directly market through group approach will help these artisans improve their earnings. This presupposes increased flow of credit to the units.

16. PLAN OF ACTION

Craft production units

- Creation of common platforms for joint initiatives trust building and information sharing.
- Exposure visits of the core players to dynamic clusters and new potential markets
- Capacity building of entrepreneurs through EDPs , and other management inputs.
- Design development to produce new diversified products based on market trends.
- Introduction of tools and machines in the cluster
- Forging of credit linkages with MFIs
- Creation of a common marketing brochure (seller’s directory)
- Creation of a buyer directory
- Buyer seller interaction / meet
- Creation of new linkages for raw material
- Joint procurement of raw materials for regular supply

Household enterprises

- Organize the artisans into SHGs / cooperatives and initiate the process of joint business activities like common procurement, direct marketing etc.
- Exposure to successful working groups and new markets
- Forging Credit linkage with Financial Institutions.
- Formalizing sub contracting relationships with the craft production units
Value Chain Analysis

Value Chain of 3 ft statue in Soft stone

<table>
<thead>
<tr>
<th>Component</th>
<th>Value in Rupees</th>
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<tbody>
<tr>
<td>Raw material purchased from Mines</td>
<td>1000</td>
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<tr>
<td>Transportation cost</td>
<td>1200</td>
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<tr>
<td>Sold to craft production units</td>
<td>1500</td>
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<tr>
<td>Initial sizing</td>
<td>1700</td>
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<tr>
<td>Carving to get final product</td>
<td>8200</td>
</tr>
<tr>
<td>Sold to local Show room (5% margin)</td>
<td>8610</td>
</tr>
<tr>
<td>Sold to national dealer (20% margin)</td>
<td>10332</td>
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<tr>
<td>Sold to Consumer (40% margin)</td>
<td>14465</td>
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Value Chain of 6 feet statue in Sand stone

<table>
<thead>
<tr>
<th>Component</th>
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<tr>
<td>Cost of Raw material</td>
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<td>Initial sizing</td>
<td>10000</td>
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<tr>
<td>Carving to get final product</td>
<td>15000</td>
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<tr>
<td>Sold to local Show room (5% margin)</td>
<td>20000</td>
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<tr>
<td>Sold to national dealer (20% margin)</td>
<td>25000</td>
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<tr>
<td>Sold to Consumer (40% margin)</td>
<td>20000</td>
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Value Chain Analysis
CURRENT OUTPUT OF THE CLUSTER

Bhubaneswar Sub-cluster

Annual turnover of 3 large firms - 18*3=54Lac
Annual turnover of 6 Medium firms - 7*6=42Lac
Annual turnover of 26 large firms - 2.5*26=65 Lac
Annual turnover TOTAL - 161 Lac (Say 1.5Crore)

Konark Sub-Cluster :

Annual consumption of raw materials consumed in the cluster 180 tonnes. Total finished product cost = (180*6000)*5=54,00000 (Fifty four Lac) per annum

Puri Sub-cluster:

Annual consumption of raw materials consumed in the cluster 120 tonnes. Total finished product cost = (120*6000)*5=36Lac per annum

TOTAL ANNUAL TURNOVER OF THE CLUSTER CAN BE SAFELY ASSUMED TO BE MORE THAN 2.49 CRORE (SAY 2.5 CRORE)
ANNEXURE III

CASH FLOW ANALYSIS

Cash flow in a craft production unit (A unit with 2 skilled craftsmen and 8 semiskilled craftsmen)

The initial investment in procurement of one truck load of sand stone is Rs. 22,000/-. Generally the raw material is available after 15 days of placing an order. Time taken for production of finished goods from one truck load of sand stone is one month. Apart from this the labor payment for getting finished goods is Rs.36,000/-. The lead time for the finished goods to reach the market takes one month. In most cases payment is received after 15 days or more after selling to the showroom dealers.

Thus time period to complete one cycle of cash flow takes 3 months. Working capital required for a craft production unit in a month is Rs. 58,000 (Raw material Rs. 22,000/- + Wages Rs.36,000). Working capital required to complete one cycle of cash flow is Rs. 1,74,000.

Cash flow in a household enterprise

The investment is buying 5 quintals of soft stone is Rs. 3,000. The time taken for production of finished goods from this raw material is one month. Generally the household units do not hire skilled labor. They put their own labor in carving. The lead time for the finished goods to reach the market takes 15 days. They get payment from the traders in one week of selling the product.

Thus the working capital for a household enterprise is Rs. 3,000 per month. The cash flow cycle is completed within 2 months.
### LIST OF NATIONAL Awardees in Stone Carving

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name</th>
<th>Year of Award</th>
<th>Address</th>
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<tbody>
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<td>1.</td>
<td>Sri Harihara Maharana</td>
<td>1967</td>
<td>Mahtab Road, Old Town, Bhubaneswar-751002, ph-0674-259262</td>
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<td>2.</td>
<td>Sri Raghunath Mahapatra</td>
<td>1968</td>
<td>Sashan padia, Old Town, BBSR-751002, ph-0674-2592003</td>
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<td>3.</td>
<td>Sri Satyabadi Maharana</td>
<td>1970</td>
<td>Dakara Bibhisana Lane, Hatasahi, Old Town, BBSR-751002</td>
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<td>5.</td>
<td>Sri Indramani Maharana</td>
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<td>6.</td>
<td>Sri Lingaraj Maharana</td>
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<td>At-Subarnapur, Po-Ganeswarpur, Via-Gop, Puri</td>
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<td>7.</td>
<td>Sri Pravakar Maharana</td>
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<td>Shishupal Chhak, Shishupalgarh, BBSR-751002</td>
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<td>8.</td>
<td>Sri Maheswar parida</td>
<td>1994</td>
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<td>10.</td>
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<td>Sri Kalinga Maharana</td>
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